SCIENTIFIC JOURNALS AND ARTICLES

The Journal of Biological Chemistry, Vol. VII., No. 3, issued February 26, contains the following: "The Optical Inactivity of Allantoin," by Lafayette B. Mendel and H. D. Dakin. The generally accepted formula for allantoin contains an asymmetric carbon atom. Yet examination of the substance from a variety of sources showed that it is optically inactive. Evidence is offered indicating that the phenomenon is due to tautomeric change. "The Mechanism of the Oxidation of Glucose by Bromine," by H. H. Bunzel. Experiments are described which support the view that glucose forms two series of salts: the first in which it dissociates into metal and negative glucose ions ($C_6H_{11}O_6^-$); the second, in which it dissociates into positive glucose ions ($C_6H_{13}O_6^+$) and an acid ion. Positive glucose ions are oxidized quantitatively to gluconic acid and an equation is developed showing the velocity of the reaction. "The Purine Metabolism of the Monkey," by H. Gideon Wells. The liver of the monkey resembles that of lower mammals in containing a uricolytic enzyme. The liver also contains xanthine-oxidase; the liver and other viscera contain nuclease, adenase and guanase. "The Effects of Castration on the Metabolism," by Francis H. McCrudden. An experimental study on dogs, the results of which do not confirm the view that castration is followed by a retention of material, especially mineral elements. "Chemical Analysis of Bone from a Case of Human Adolescent Osteomalacia," by Francis H. McCrudden. Bone from osteomalacia contains more magnesium and sulphur, less calcium and phosphoric acid than normal: the increase in the former is far greater than the decrease in the latter. "The Influence of Dietary Alternations on the Types of Intestinal Flora," by C. A. Herter and A. I. Kendall. Extended experiments on monkeys and cats show that an abrupt change from a dominantly protein diet to a dominantly carbohydrate diet is followed by alterations in the intestinal flora, in the putrefaction products in the feces and urine and in the clinical conditions. Degeneration of the proteolyzing bacteria takes place and they are substituted by acidophilic, non-protolyzing bacteria; marked reduction in putrefactive products in feces and urine occurs; a marked improvement in spirits and activity may be noted, indicating a greater sense of bodily and psychical well-being.

HALLEY ON THE AGE OF THE OCEAN

EDMUND HALLEY was a very great man. He was not only the first to predict correctly the return of a comet, that which is now known by his name, but also—before Newton had announced his results to any one—arrived at the conclusion that the attraction of gravitation probably varied inversely as the square of the distance. While these and other important achievements of his are well known, it seems to have been forgotten that Halley devised a method of determining the age of the ocean from chemical denudation. Indeed, I find no mention of Halley in the indices of some of the most authoritative works on geology and geochemistry, while it is evident that neither Mr. T. Mellard Reade[1] nor Mr. J. Joly[2] were aware of a predecessor in this important field. It was almost by accident that I came across Halley's paper read before the Royal Society in 1715, extracts from which are given below.

Halley recognized that the method as he proposed it was almost impracticable, but writing as he did twenty-eight years before Lavoisier's birth, he could hardly have guessed that accurate analyses of river waters, whose solvent action he so clearly describes, would ever become not merely possible but easy. It is very interesting to note that Halley's reasoning is strictly "uniformitarian" while he recognized the tendency involved to a maximum estimate.

Subject to this same limitation (extended to other features besides an original saltness of the sea), Mr. Joly's method of determining the rate at which the accumulation of salt in the ocean takes place from the analysis of

[1] "Chemical Denudation in Relation to Geological Time," 1879.

[2] *Trans. R. S. Dublin*, Vol. 7, 1899, p. 23.